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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,022	03/23/2004	Michael J. Walk	P18288	2250
28062	7590	12/13/2005		
BUCKLEY, MASCHOFF, TALWALKAR LLC 5 ELM STREET NEW CANAAN, CT 06840			EXAMINER CLARK, JASMINE JHIHAN B	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/807,022

Applicant(s)

WALK, MICHAEL J.

Examiner

Jasmine J. Clark

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) 9-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 14-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| <p>1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>08/04/2005</u>.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
|---|--|

Election/Restrictions

1. Applicant's election with traverse of group I, claims 1-8, and 14-16 in the reply filed on 09/28/2005 is acknowledged. The traversal is on the ground(s) that "Restriction is proper only where an application contains claims directed to two or more independent or distinct inventions. As described in MPEP§806.05(f), the test for determining distinctness of claims directed to a product (i.e., the Group I claims) and to a process for making the product (i.e., the group II claims).....However, after the reviewing MPEP§806.05(f), Applicant notes that the first group of the test for distinctness is "that the process as claimed is not an obvious process of making the product and the process as claimed can be used to make other and different products(emphasis added)". Applicant submits that the claimed product and process do not satisfy the first prong of the test for distinctness because the claimed process is an obvious process of making the claimed. This is not found persuasive because the reason for insisting on restriction as stated in MPEP§ 808 have been clearly met.

The requirement is still deemed proper and is therefore made FINAL.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a **separate sheet within the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal

phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Warren (US 6,435,883 B1).

Warren shows a structure of a device, comprising a pre-formed portion of underfill material 14 (see column 4, line 6, and see Fig. 1) defining openings, the openings to pass electrical interconnects for coupling an integrated circuit 12 to a portion of substrate 16.

Concerning claim 2, the recitations "a second pre-formed portion of underfill material coupled to the pre-formed portion of the underfill material, the second portion of the underfill material defining second openings, the second openings to pass second

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electrical interconnects for coupling a second integrated circuit die 12 to a second portion of a substrate, please see Fig. 1.

Concerning claims 3 and 4, a pre-formed sheet and/or a pre-formed tape of underfill material comprising the first portion and the second portion, please see Fig. 1 and see column 4, line 6).

Concerning claim 8, wherein the underfill material comprising no-flow material, please see column 3, line 41.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as applied to claims 1-8 above, and further in view of Kooi et al. (US 2005/0082650 A1).

As per the above discussion, the applied references '883 teaches including the pre-formed portion of underfill defining openings; and further including an integrated circuit die, for example 12 disposed on a substrate 16. However, the applied reference '883 fails to teach including a microprocessor, and a double data rate memory coupled to the microprocessor.

Kooi teaches a system comprising (see Fig. 12, and [0036] and [0037]) a microprocessor, and a double data rate memory coupled to the microprocessor. Hence, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a microprocessor and a double data rate memory that coupled to the microprocessor for the reasons as taught by Kooi.

Concerning claim 15, a system according to claim 14, the underfill material comprising no-flow underfill material, please see the above discussion in paragraph 3.

Concerning claim 16, a system according to claim 14, Fig. 1 shows the integrated circuit die 12 comprising a first plurality of electrical contacts 12a; the substrate 16 comprising a second plurality of electrical contacts 12b; and the electrical interconnects 13 for coupling the first plurality of electrical contacts to the second plurality of electrical contacts.

References Cited

5. The references are cited and should be carefully considered: Buchwalter et al. (US 2002/1019228 A1) teach including the use of the curing underfill, and Morganelli et al. (US 2004/0234689 A1) teach including a pre-formed film which is the underfill encapsulant.

Field of Search

6. This application was searched in class 257, subclasses 778, 787, 788, 789, 790, 791, 792, 793, 794, 795, in view of the limitations as set forth in the claimed invention.

Telephone Inquiry Contacts

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jasmine J. Clark whose telephone number is (571) 272-1726. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jjbc/12/11/05

**JASMINE CLARK
PRIMARY EXAMINER**

